



UNIVERSITÄT
LEIPZIG

The Leipzig Institute for Meteorology (LIM) at Leipzig University, Germany, invites applications for a

PhD Position

Using retrievals for quantifying riming and secondary ice production processes from spectral, polarimetric cloud radar measurements.

Position & project description

In mid-latitudes, most precipitation is generated through the ice phase in mixed-phase clouds, but the exact pathways through which ice, liquid water, cloud dynamics, orographic forcing, and aerosol particles are interacting during ice, snow and rain formation are not well understood. This is particularly true for riming and secondary ice production (SIP) processes that are likely related to the largest uncertainties with respect to quantitative snowfall formation. Filling the gaps in our understanding of SIP and riming is especially crucial for mountainous regions that are particularly vulnerable to changes in precipitation and the water budget such as the ratio between rain and snowfall. CORSIPP (Characterization of orography-influenced riming and secondary ice production and their effects on precipitation rates using radar polarimetry and Doppler spectra) is a research project dedicated to understanding riming and SIP processes in complex terrain. For this, we will operate an innovative simultaneous-transmission-simultaneous-reception (STSR) scanning W-band cloud radar together with a novel in situ snowfall camera for one entire winter season in the Colorado Rocky Mountains as part of the Atmospheric Radiation Measurement (ARM) Surface Atmosphere Integrated Field Laboratory (SAIL) campaign. The PhD will work together with a Postdoc on this project. The PhD will be responsible for operation of the W-band scanning cloud radar during the field experiment and develop empirical retrieval methods for riming and SIP using the ARM Ka-band vertically pointing cloud radar and the polarimetric W-band radar. The position is funded by the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft) Priority Program "Fusion of Radar Polarimetry and Numerical Atmospheric Modelling Towards an Improved Understanding of Cloud and Precipitation Processes".

Terms of employment

The position (75% of the TV-L E13 pay scale of the German public sector) is awarded for 3 years and should be filled by April 1st, 2022. We offer a productive and interdisciplinary work environment including comprehensive supervision.

Qualification requirements

Applicants should have a Master in Meteorology, Physics or a related field. We expect strong interest in atmospheric science, in particular in cloud physics, atmospheric remote sensing, radar polarimetry, and development of microphysical retrieval methods. Previous experience with these subjects would be highly advantageous for the position. Experience in high-level

scientific programming for data analysis e.g., with Matlab or Python is required. Candidates must possess excellent communication skills in written and spoken English and should participate in the field campaign in Colorado for several weeks.

Applications

Interested candidates should send applications including a motivation letter, a CV, PhD certificates, other qualifications and the contact information of two referees as a single PDF to Jun-Prof. Heike Kalesse-Los

heike.kalesse[at]uni-leipzig.de

Applications will be accepted until the position is filled, the review of applications starts January 14th, 2022.

Selection

The selection for the position will be based solely on scientific merit without regard to gender, religion, national origin, political affiliation, marital or family status or other differences. Among equally qualified candidates, handicapped candidates will be given preference.